

ATOMIC ENERGY *newsletter*®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

Dear Sir:

June 14th, 1955
Vol. 13... No. 9

A multi-curie fission products pilot plant, to be built in the X-10 area at Oak Ridge, Tenn., has now been offered to interested bidders under invitation No. 401-55-8A, covering phase one of this job. Bids will be received until July 7, 1955; a prebid conference will be held June 22nd, 1955, at Oak Ridge. Inquiries should be sent to R. J. Dunbar, USAEC, Oak Ridge, Tenn. (Other BIDS ASKED, CONTRACTS AWARDED, p. 2 this LETTER.)

First official interest expressed publicly, in thorium, has now been made by the USAEC. Last fortnight, Lewis L. Strauss, USAEC Chairman, wrote Governor E. C. Johnson of Colorado stating that the USAEC is now prepared to negotiate contracts at prices up to \$4 per pound for thorium oxide content of minerals. (While no Government purchasing program in thorium has existed, going prices for 10% thorium concentrates have been quoted by Lindsay Chemicals Co., N. Chicago, at \$1 per pound of thorium oxide.)

A \$250,000 contract for 5,000 portable radiation survey instruments has now been awarded by the General Services Administration to Jordan Electronics, Inc., Calif., a wholly owned subsidiary of Panellit, Inc., Chicago. The instruments will be used by the Federal Civil Defense Administration for nuclear weapons defense. (Other PRODUCT news, p. 3 this LETTER.)

What is probably the first book in non-technical language on nuclear technology has now been issued by Reinhold Publishing Corp., New York, under the title "Materials for Nuclear Power Reactors" (\$3.50). The authors, Henry H. Hausner and Stanley B. Roboff, are, respectively, manager of atomic energy engineering and manager of industrial coordination, of the atomic energy division of Sylvania Electric Products, Inc. The book considers the criteria which must be considered in selecting materials for shielding, cladding fuel elements, for moderators and reflectors, and for other important parts of nuclear reactors. (Other BOOKS, p. 4 this LETTER.)

Holdings of Dominion Magnesium, Ltd., Toronto, by Atomic Development Mutual Fund, Inc., have been increased to 9,300 shares on what the investment trust cites are "favorable opportunities for growth in earning power". The growth will be particularly encouraged, the trust feels, if the Canadian government produces uranium metal at the Port Hope refinery of Eldorado Mining & Refining, Ltd., since Dominion would then have a stable market for its high purity calcium and magnesium. (Further news, Port Hope, p. 3 this LETTER.)

Initial entrance into the uranium field has now been made by Gulf Coast Western Oil Co., Oklahoma City, Okla., with its recent purchase of producing uranium property comprising over 19 claims on 380 acres in Rio Blanco County, Colo. Gulf Coast had previously confined its activities to the production of crude oil and natural gas from wells in Oklahoma, Texas, Kansas, and New Mexico. (Other FINANCIAL news, p. 3 this LETTER.)

ATOMIC ENERGY *newsletter*®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

Dear Sir:

June 14th, 1955
Vol. 13... No. 9

A multi-curie fission products pilot plant, to be built in the X-10 area at Oak Ridge, Tenn., has now been offered to interested bidders under invitation No. 401-55-8A, covering phase one of this job. Bids will be received until July 7, 1955; a prebid conference will be held June 22nd, 1955, at Oak Ridge. Inquiries should be sent to R. J. Dunbar, USAEC, Oak Ridge, Tenn. (Other BIDS ASKED, CONTRACTS AWARDED, p. 2 this LETTER.)

First official interest expressed publicly, in thorium, has now been made by the USAEC. Last fortnight, Lewis L. Strauss, USAEC Chairman, wrote Governor E. C. Johnson of Colorado stating that the USAEC is now prepared to negotiate contracts at prices up to \$4 per pound for thorium oxide content of minerals. (While no Government purchasing program in thorium has existed, going prices for 10% thorium concentrates have been quoted by Lindsay Chemicals Co., N. Chicago, at \$1 per pound of thorium oxide.)

A \$250,000 contract for 5,000 portable radiation survey instruments has now been awarded by the General Services Administration to Jordan Electronics, Inc., Calif., a wholly owned subsidiary of Panellit, Inc., Chicago. The instruments will be used by the Federal Civil Defense Administration for nuclear weapons defense. (Other PRODUCT news, p. 3 this LETTER.)

What is probably the first book in non-technical language on nuclear technology has now been issued by Reinhold Publishing Corp., New York, under the title "Materials for Nuclear Power Reactors" (\$3.50). The authors, Henry H. Hausner and Stanley B. Roboff, are, respectively, manager of atomic energy engineering and manager of industrial coordination, of the atomic energy division of Sylvania Electric Products, Inc. The book considers the criteria which must be considered in selecting materials for shielding, cladding fuel elements, for moderators and reflectors, and for other important parts of nuclear reactors. (Other BOOKS, p. 4 this LETTER.)

Holdings of Dominion Magnesium, Ltd., Toronto, by Atomic Development Mutual Fund, Inc., have been increased to 9,300 shares on what the investment trust cites are "favorable opportunities for growth in earning power". The growth will be particularly encouraged, the trust feels, if the Canadian government produces uranium metal at the Port Hope refinery of Eldorado Mining & Refining, Ltd., since Dominion would then have a stable market for its high purity calcium and magnesium. (Further news, Port Hope, p. 3 this LETTER.)

Initial entrance into the uranium field has now been made by Gulf Coast Western Oil Co., Oklahoma City, Okla., with its recent purchase of producing uranium property comprising over 19 claims on 380 acres in Rio Blanco County, Colo. Gulf Coast had previously confined its activities to the production of crude oil and natural gas from wells in Oklahoma, Texas, Kansas, and New Mexico. (Other FINANCIAL news, p. 3 this LETTER.)

ATOMIC ENERGY BUSINESS REPORTS...

INCREASE IN USAEC SPENDING SHOWN BY BUDGET ESTIMATES:- A total operating estimate of \$1,045,000,000 for fiscal year 1956 and an additional estimated \$1,800,000,000 in contractual authority has been asked by the USAEC, according to recent testimony of USAEC officials before a sub-committee of the House Appropriations Committee in Washington, just released. Of the amount, \$947,458,000 is desired for production of fissionable materials; this is a 40% increase despite reduced production costs. For nuclear weapons (both fission and fusion types) it is intended to spend \$271,148,000; this will be an increase of \$44,700,000. The nuclear aircraft project will take \$37,900,000, showing an increase over the budget of \$21,600,000 projected for the current fiscal year. (USAEC Chairman Strauss told sub-committee members that experimental results in the past year are very encouraging and warrant the intensification and expansion the larger budget indicates.) A total of \$134,600,000 will be spent on nuclear reactor projects, the budget estimate shows, including civilian and military. Among the military nuclear reactor projects, will be \$25,000,000 for a prototype of a Naval ship propulsion reactor to be established at the national reactor testing station, Arco, Idaho. Of the \$25,000,000, some \$6,000,000 will initially be spent for test facilities; the balance of \$19,000,000 is for engineering, design and construction of the reactor and for associated equipment. Another military reactor will be the Army's mobile "package plant", on which the USAEC intends to spend \$2.1 million in fiscal 1956 as compared with the present level of \$678,000.

WEST COAST BANK TO BE ADVISED ON NUCLEAR WORK:- Periodic reviews on nuclear developments will now be furnished the Bank of America, San Francisco, by Stanford Research Institute, under a recent agreement made by the two organizations. The action was taken by the Bank because nuclear energy "is already a factor in our economy", and the Bank desires to keep abreast of nuclear developments, S. Clark Beise, president, said.

FIRST CANADIAN NUCLEAR POWER PLANT MAY BE COMPLETED IN THREE YEARS:- A completion date of three years has been set on Canada's first nuclear power plant, the Ontario Hydro-Electric Power Commission announced in Toronto last week. The plant, to be erected at Des Joachims, on the Ottawa River, about 10 miles northwest of the Chalk River atomic energy establishment, will be constructed jointly by Ontario Hydro, Atomic Energy of Canada, Ltd., and the Canadian General Electric Co., Ltd. Hydro's share has been estimated at approximately \$3.5 million; C.G.E. will pay a substantial part of the cost; and the Canadian government the balance. The plant will be known as N.P.D. (nuclear power demonstration) to describe its function as a practical means of studying nuclear power central station operation, and as a research tool.

NEW DIVISION SET UP BY AIRCRAFT CONCERN:- A nuclear engineering and manufacturing division has now been set up by North American Aviation, Inc., to embrace all the activities of NA in the nuclear field. Chauncy Starr, who has been in charge of nuclear work carried on by the firm, has now been made a vice-president and heads the new division. Operations of the division will include the design, development, and servicing of nuclear reactors for medical, industrial, and scientific research, and the generation of electrical energy.

NOTES:- A new division to conduct research in the atomic energy field has now been established by American Radiator. The new unit will be located at Redwood City, Calif. General Mills, Inc., has now joined with Minneapolis-Honeywell Regulator and Northern States Power, in a research project in the nuclear energy field.

BIDS ASKED, CONTRACTS AWARDED...in the nuclear field...

CONTRACTS AWARDED:- Contract has now been negotiated by the USAEC with Kaiser Engineers (div. of Henry J. Kaiser Co.) Oakland, Calif., for the architect-engineering of an engineering test reactor; some 29 companies were considered for the job.

BIDS ASKED:- Bids have now been asked under inv. no. 151-55-56 to do the electrical, mechanical, heating and ventilating work, and miscellaneous work, at project C-420, of the USAEC, at Paducah, Ky. The mechanical work includes electrolyte blowcases, entrainment separators, etc; electrical items embrace process power, auxiliary power, etc.; while miscellaneous items include towers, hoists, etc.

NEW PRODUCTS & PROCESSES...for nuclear work...

NEW PRODUCTS:- New scintillation detector, type FS-11, for uranium mineral prospecting. Manufacturer states the unit has high sensitivity in the five ranges which the instrument covers. --Technical Associates, Burbank, Calif.

New materials called by the manufacturer "antirads" are said to increase the resistance of rubber to nuclear radiation. The antirads are added to the rubber in the Banbury mixer stage, before it is vulcanized. Manufacturer states that an increase under radiation of ten times normal life is achieved, in such specially prepared rubber. --B. F. Goodrich Co., Akron, Ohio.

NEW PROCESSES:- With the new refining circuit at Eldorado Mining & Refining's Port Hope (Canada) refinery now "on stream", this Canadian government agency is producing a metal grade uranium concentrate, an official of Eldorado recently stated. (Port Hope eventually will produce uranium metal, according to plans for that unit. At present, its uranium concentrates go to plants in the United States for final processing into pure uranium metal.)

NOTES:- A new brochure has been made available by the atomic power equipment department of General Electric Co., Schenectady, N.Y., showing equipment it can furnish for use in nuclear reactor and nuclear laboratory systems. G-E's research reactor systems, remote handling equipment, cooling system components, an electromagnetic pump unit, etc., are shown in the bulletin.

ATOMIC ENERGY FINANCIAL REPORTS...

SUIT FILED AGAINST CLIMAX MOLYBDENUM:- Suit has now been filed in Federal District Court (Denver, Colo.) by fifty-seven stockholders (who are connected with Minerals Engineering Co., Grand Junction, Colo.) to force Climax Molybdenum Co. to return to Climax Uranium Co. some \$2,700,000 worth of stock which it is claimed was acquired illegally by Climax Molybdenum. The suit contends that in May, 1950, when Climax Uranium was formed, Climax Molybdenum got 7,500 shares, Minerals Engineering officers and shareholders got 2,500 shares, and it was agreed that this 75-25 ratio was to be maintained. The complaint states that in the Summer of 1952 Climax Molybdenum acquired an additional 6,950 shares, at the \$1 par value of the stock, thus obtaining 84% of control. This transaction, the complaint states, has denied the minority their preemptive rights to purchase such stock at \$1 par value, since the articles of incorporation of Climax Uranium permit changes in preemptive rights by vote of 80% or better of the voting stock. The current market price of Climax Uranium is in excess of \$400 a share.

URANIUM MINING FIRM REPORTS STOCKHOLDING CHANGE BY OFFICER:- Some 2,500 common shares of Continental Uranium, Inc., were sold last month by Everett E. Yount, assistant treasurer, according to a report made to the American Stock Exchange as required by the Securities Exchange Commission Act. This decreased Mr. Yount's direct holdings to 12,500 shares.

URANIUM ASSOCIATION FORMED:- The Uranium Security Dealer's Ass'n. has now been formed by U.S. security firms specializing in uranium. First president is Walter F. Tellier, Tellier & Co., Jersey City, N. J. More than 60 dealers attended the organizational meeting in New York last month; currently, about 240 dealers specialize in uranium. The association will propose that the Securities and Exchange Commission change its rules so that a uranium dealer either makes a firm commitment for the underwriting or agrees to return subscriptions if the complete issue is not sold. Mr. Tellier feels the rules should require expenses of the issue to come off at the end of a deal or be pro-rated; that the maximum underwriting commission be 25%; and that options taken for the purchase of stock by the dealer or by executives of the company shall be priced at least 1/3 above the public offering price.

ANALYSES AVAILABLE:- Reviews of firms active in atomic energy work are available from Amott, Baker & Co., 150 Broadway, NYC, on Farrel-Birmingham Co. (reactor components and associated equipment); and from J. A. Hogle & Co., 50 Broadway, NYC, on American Smelting & Refining Co. (uranium refining).

CANADIAN URANIUM MINING FIRM REPORTS PROFITABLE OPERATION:- The first quarter operations of Rix-Athabasca Uranium Mines, Ltd., (Toronto) resulted in an operating profit of \$86,835.55, according to John B. Aird, president. Mr. Aird observed that the fire at one of the company's mines would reduce this income for the three months needed for rebuilding operations at the damaged property.

IONIZING RADIATION...investigations & findings...

FALL-OUT FROM WEAPONS DESCRIBED:- Willard F. Libby, member, USAEC, has now indicated in a speech delivered last fortnight at the University of Chicago that thermonuclear weapons are relatively inexpensive since they utilize uranium-238 as their major explosive content. Because of this relative cheapness using quantities of uranium-238, their detonation will release large quantities of highly toxic products such as radiostrontium, and radioiodine. In discussing such weapons, Dr. Libby pointed out that an initial dosage rate of 67 R/day (as produced by a weapon of the so-called 10 megaton class) would be produced, and the persistence of the fall-out would continue for a considerable period of time.

INCREASING USE OF RADIATION REQUIRES CAUTION, CONFERENCE TOLD:- Delegates at the 51st annual State Health Conference, at Lake Placid, N.Y., last week, were told by S. Allan Lough, senior physicist at Francis Delafield Hospital, N.Y., that patients, physicians, and industrial and clinical workers are receiving increasing amounts of ionizing radiation. Caution is necessary, he noted, especially because of the increasing use of radioactive materials in industry. Records should be kept of such exposures, Russell H. Morgan, professor of radiology, Johns Hopkins University, told the delegates, so that the cumulative exposures of individuals can be known. Pointing up this need for record keeping was the statement of George W. Morgan, isotopes division, USAEC, Oak Ridge, Tenn., that more than 2,600 industrial, medical, and research organizations are licensed to use radioisotopes. He said that in the U.S. more than 500,000 patients have been given radioisotopes for diagnostic purposes, with about 80,000 having received radioisotope therapy.

NEW BOOKS & OTHER PUBLICATIONS...in the nuclear field...

Recommended Safe Practice for Laboratories Handling Radioactive Materials. Provides the fire protection specialist with information on laboratories handling radioactive materials, and gives designers and operators of these laboratories guidance on practices necessary for fire safety. Prepared by Committee on Atomic Energy of National Fire Protection Association. 41 pages. --Nat. Fire Protection Assoc., Boston 10, Mass. (50¢)

Proposed Amendment to Budget Involving Decrease in USAEC Appropriation for 1956 Fiscal Year. House document No. 122; item 996--House Document Rm., House of Representatives, Wash. 25, D.C. (n/c)

Isotope Geology, by K. Rankama. Covers natural radioactivity, fractionation and distribution of stable isotopes in nature; and their use in age determination. Useful for the geologist in problems of geology. 535 pages. --McGraw-Hill Book Co.

IN THE EDUCATIONAL FIELD..nuclear work of interest...

UNIVERSITY PLANS SUB-CRITICAL NUCLEAR REACTOR:- A sub-critical nuclear reactor is now planned in conjunction with New York University's College of Education programs in nuclear engineering starting next Fall. The reactor will consist of a five-foot tank of water, in which two tons of uranium rods are placed. The neutron source, of polonium and beryllium, will be below floor level and will be hoisted up among the uranium rods by remote control. Output will be 1/300th of a watt, with neutron intensity approximately 100 million neutrons per second. The advantages of such a sub-critical assembly, according to Lyle B. Borst, chairman of NYU's physics department, are that realistic experiments (foil irradiations, Geiger counter studies, etc.) may be conducted without the need of an expensive full-sized reactor.

INCREASE IN SUMMER APPOINTMENTS AT ARGONNE NATIONAL LABORATORY:- faculty members and students have taken Summer appointments at Argonne National Laboratory (operated for the USAEC by University of Chicago), as compared with twenty-nine faculty members and students in residence last Summer at Argonne. The increase reflects the larger amount of teaching in fields related to atomic energy, Argonne points out.

PENNSYLVANIA STATE UNIVERSITY TO BE HOST TO NUCLEAR SOCIETY:- First annual meeting of the American Nuclear Society will be held June 27-29 at Penn State, University Park, Pa. Reservation forms, details, from: W. W. Miller, Dep't. of Chemistry, 115 Whitmore Laboratory, at the University. Sessions will cover fast reactor technology, radiation effects, experimental techniques, chemical problems, etc.

ATOMIC PATENT DIGEST...new issues in the nuclear field...

To Private Concerns:- Temperature compensated bore hole radioactivity apparatus. In an apparatus for the measurement of radioactivity within a bore hole, a cartridge which is lowered within the bore hole, and which contains elements responsive to the radiation therein. These elements are supplied with a voltage whose value depends upon the temperature. Means are provided to receive a voltage from the surface of the earth, and to apply a proper operating voltage for the radioactive sensitive element. U. S. Pat. No. 2,709,753 issued May 31st, 1955; assigned to Schlumberger Well Surveying Corp., Houston, Tex. (Inventors: Shelley Krasnow and Meyer Joseph Test.)

Apparatus for indicating the ratio of radioactivity of an unknown specimen to that of a standard specimen. Comprises (in part) a radiation detector and scaler for producing electrical pulses proportional in rate of occurrence to radioactivity, and associated electronic circuitry. U. S. Pat. No. 2,709,754 issued May 31st, 1955; assigned to Nuclear Instrument & Chemical Corp., Chicago, Ill. (Inventor: William C. Davidson.)

To Government Agencies:- Magnetic-period mass spectrometer. Comprises (in part) means for establishing a homogeneous magnetic field, and a chamber arranged to be evacuated located in this field, with an ion source located in this chamber. This source is arranged for the emission of positive ions in a direction perpendicular to the lines of flux of the magnetic field, so that the ions are deflected into a circular orbit of motion. Means are also provided for subjecting these ions to electric fields of short time duration. U. S. Pat. No. 2,709,750 issued May 31st, 1955; assigned to United States of America (USAEC). (Inventor: Lincoln G. Smith.)

Saturable reactor. In saturable reactor, a first longitudinally segmented cylinder, a second such cylinder located concentric with and about the first cylinder, with connecting plates atop the cylinders electrically connecting individual segments of the first cylinder to individual segments of the second cylinder. Annular rings formed of a magnetic material are located about the first cylinder inside the second cylinder in stacked relationship to each other and insulated from the cylinders. A pair of insulating cover plates at each end of the cylinders hold the assembly rigid. U. S. Pat. No. 2,709,791 issued May 31st, 1955; assigned to United States of America (USAEC). (Inventor: Robert L. Anderson, Jr.)

Apparatus for continuous casting of high-melting-point metals; specifically, for forming an ingot of a metal such as titanium, zirconium, and the like. Comprises (in part) an air-tight melting chamber, an ingot mold in this chamber so tapered as to reduce the cross-section of the forming ingot as it is withdrawn downwardly in the ingot mold, with the mold being cooled so that the metal first solidifies at the mold walls. U. S. Pat. No. 2,709,842 issued June 7, 1955; assigned to United States of America (USAEC) (Inventor: Gordon R. Findlay.)

Method of producing radioactive iodine, and shipping container for it. Comprises (in part) forming a solid mixture of a liquefiable vehicle and tellurium-132, confining the mixture in a closed vessel to cause iodine-132 (formed by the decay of the tellurium-132) to accumulate therein, liquefying the mixture in the vessel, and passing a dry gas inert to the vehicle containing the iodine through the molten mixture to remove iodine therefrom. U. S. Pat. No. 2,710,249 assigned to United States of America (USAEC). (Inventors: Warren E. Winsche, Louis G. Stang, Jr., Walter D. Tucker, and Gerald J. Selvin.)

Ion source. A beam source of positive ions comprising (in part) an evacuated housing, a source of positive ions, a plate provided with a collimating slit located within this housing, and with means to maintain a potential gradient becoming more negative between the source and the slit. An electrostatic deflection negative particle trap, located between the ion source and the slit transmits the beam of positive ions from the source through the collimating slit in a substantially straight path and traps negative particles travelling toward the ion source. U. S. Pat. No. 2,710,354 issued June 7, 1955; assigned to United States of America (USAEC). (Inventors: Mark G. Inghram and David C. Hess.)

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

June 14th, 1955